

REMARKS/ARGUMENTS

In response to the Office Action Dated February 18, 2003, Claims 2, 5, 12, 15, and 18 are amended. Claims 1-21 remain in the application. It is not the Applicants' intent to surrender any equivalents because of the amendments or arguments made herein. Reexamination and reconsideration of the application as amended, are respectfully requested.

Allowable Subject Matter

On page 4 of the Office Action, claims 2, 5, 8, 12, 15, and 18 were objected to as being dependent on a rejected base claim, but would otherwise be allowable if written in independent form including all of the limitations of the intervening claims.

The Applicant thanks the Examiner and formally recognizes the allowable subject matter of claims 2, 5, 8, 12, 15, and 18. Applicants have rewritten the claims in independent format to overcome the objections, and respectfully submit that the claims are now in good order for allowance.

Art-Based Rejections

On page 2 of the Office Action, claims 1, 4, 7, 10, 11, 14, 17, 19, and 21 were rejected under 35 U.S.C. § 103(a) as being anticipated by Konno. et al., USPN 6,064,130. On pages 3-4 of the Office Action, claims 3, 6, 13, and 16 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Konno in view of Chan et al., USPN 3,772,464, and claims 9 and 20 were rejected as being unpatentable over Konno in view of Nishimura et al., USPN 5,438,448.

The Applicant respectfully traverses the rejections in light of the amendments above and the arguments below.

The Konno Reference

The Konno reference discloses a motor having a dynamic pressure bearing. The cylindrical body 20, the polygon mirror 23, the fixed shaft 25 and the upper and

under thrust cap members 28 and 29 are made of copper alloy or aluminum alloy. See Col. 2, lines 45-48. The polygon mirror may also be made of ceramic material. See Col. 3, lines 24-25.

The Chan Reference

The Chan reference discloses a rotating polygon mirror assembly with an interior motor. Aluminum used as a metallic member in the present invention is easy to effect mirror surface working and is inexpensive, and usually by diamond cutting the outer periphery of the blank a polygonal structure is formed. See Col. 2, lines 37-40. As a thin metal film of high reflection factor formed on the aluminum mirror surface, a thin film of gold, silver, or copper and the film thickness thereof may be 800 Angstroms or more. See Col. 2, lines 41-44. Also, the polygon mirror is rotated at a high speed and therefore, it becomes necessary for the thin film provided on the surface of the metallic member to have sufficient intimate contact property and durability to withstand the rotation. Accordingly, it is preferable to further provide a thin film of chromium, tungsten, or nickel between the mirror surface of the blank and the thin metal film of high reflection factor. See Col. 2, lines 57-65.

The Nishimura Reference

The Nishimura reference discloses a turning mirror. To protect the mirror surface from such damage and to improve moisture resistance characteristics, a protective film is preferably formed on the metallic reflective surface 15. See Col. 6, lines 33-36.

The Claims are Patentable over the References

The present invention describes a polygon mirror. A polygon mirror in accordance with one embodiment of the present invention comprises a sintered body, wherein the sintered body is formed from a mixed powder containing copper powder as a primary component and has a weight density of about 75% or more in ratio to pure copper.

The cited references do not teach nor suggest the limitations of the claims of the present invention. Specifically, the cited references do not teach nor suggest the limitation of the polygon mirror comprising a sintered body containing copper powder as a primary component as recited in the claims of the present invention.

Instead, Konno specifically states that the polygon mirror 23 is either a copper alloy, an aluminum alloy, or a ceramic material. Such materials are not sintered bodies that contain copper powder as a primary component.

The advantage of having a sintered body that contains copper powder as a primary component is that a high reflective rate for the surfaces of such a body is easily achieved. Further, reduced material waste, simplified process steps, and stable processing precision are all possible with a sintered body as opposed to bodies made from copper or aluminum alloys, or ceramic materials.

The ancillary Chan and Nishimura references are not seen to remedy the deficiencies of the primary Konno reference. Namely, the ancillary Chan and Nishimura references do not teach nor suggest the limitation of the polygon mirror comprising a sintered body containing copper powder as a primary component as recited in the claims of the present invention.

As such, independent claims 1 and 11 are allowable over the cited reference. Further, claims 3, 4, 6-10, 13, 14, 16, 17, and 19-21 are also patentable over the cited reference, not only because they contain all the limitations of the independent claims, but because they also recite additional novel elements and features not found in the prior art.

In view of the foregoing, it is respectfully submitted that the application is in condition for allowance. Reexamination and reconsideration of the application, as amended, are requested.

If for any reason the Examiner finds the application other than in condition for allowance, the Examiner is requested to call the undersigned attorney at the Los

Angeles, California telephone number (213) 337-6742 to discuss the steps necessary for placing the application in condition for allowance.

If there are any fees due in connection with the filing of this response, please charge the fees to our Deposit Account No. 50-1314.

Respectfully submitted,
HOGAN & HARTSON L.L.P.

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